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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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THE ECLIPSE GROUP
10453 RAINTREE LANE
NORTHRIDGE, CA 91326

EXAMINER

MUNOZ, GUILLERMO

ART UNIT PAPER NUMBER

2637

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,087

Applicant(s)

TSO ET AL.

Examiner

Guillermo Munoz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-7, drawn to a Receiver RF Front End, classified in class 375, subclass 136.
- II. Claims 8-11, drawn to a GPS Interface, classified in class 375, subclass 220.

The inventions are distinct, each from the other because of the following reasons:

Inventions GPS RF Front End and GPS Interface are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the GPS RF Front End can be coupled to an ASIC chip using common interfacing. The subcombination has separate utility such as power management.

During a telephone conversation with Francisco Rubio-Campos on October 27, 2004 a provisional election was made without traverse to prosecute the invention of GPS Receiver RF Front End, claim 1-7. Affirmation of this election must be made by applicant in replying to this Office action. Claims 8-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaeffer in view of Applicant Admitted Prior Art (AAPA).

Regarding claim 1, Shaeffer disclose almost all the claimed subject matter "GPS receiver...IF active filter" in claim 1 as follows. Shaeffer illustrates a typical single-conversion GPS receiver, note page 5, having an I/Q active filter, an AGC circuit, and ADC circuit. Shaeffer describes the illustrated filter as an Active filter, note page 2 line 5, having spectrum characteristics illustrated on page 6 IF Spectrum illustration. Additionally, Shaeffer illustrates the Low-IF Receiver using dual mixers in combination with input signals from a voltage

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controlled oscillator, note page 8. However, Shaeffer does not show a digital processing section coupled to the Single-Conversion Receiver.

AAPA disclose “the specific designs presented here are comprised of industry standard building blocks and functions that have been described elsewhere in the related art”, note specification, lines 6-8. AAPA, further, discloses, a GPS receiver typically comprises an RF Front End and a digital Application Specific Integrated Circuit, note page 6, lines 19-20.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Shaeffer’s Single-Conversion Receiver with AAPA’s teaching of coupling a digital signal processor to the RF-Front End section of a GPS receiver, since AAPA suggest on page 6, lines 19-20, that the modification is typically done in GPS receivers.

Regarding claim 2, Shaeffer further teach the claimed subject matter, note Single-conversion receiver having a LNA, on page 5.

Regarding claim 3, Shaeffer teach a 2 bit information signal output from the single-conversion receiver, however, Shaeffer does not expressly state the two bit information bit is PECL compatible.

AAPA disclose “the specific designs presented here are comprised of industry standard building blocks and functions that have been described elsewhere in the related art”, note specification, lines 6-8. AAPA, further, discloses, a GPS receiver typically comprises an RF Front End and a digital Application Specific Integrated Circuit, note page 6, lines 19-20.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to implement the Single-Conversion receiver output at PECL levels, since that would enable the signals to be processed by the ASIC processor.

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Regarding claim 4; as applied to claim 3 above, Shaeffer disclose providing a sample clock to the ADC, note Single-Conversion Receiver illustration on page 5.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaeffer in view of Applicant Admitted Prior Art (AAPA) and Jasper.

Regarding claim 5; as applied to claim 3 above, Shaeffer disclose providing a sample clock to the ADC, note Single-Conversion Receiver illustration on page 5. However, Shaeffer does not explicitly state the sample rate.

Jasper teach another GPS receiver having an analog to digital converter with a sampling rate of 38.192 MHz, note Col.8, lines 14-15.

Therefore, it would have been obvious to one having ordinary skill at the time of the invention to implement Shaeffer's ADC sampling rate with Jasper's teaching of 38.192 MHz, since Jasper suggest in Col.8, lines 14-15, that the sampling frequency is in accordance with the Nyquist sampling theorem.

Regarding claim 6; as applied to claim 5, Shaeffer does not disclose providing a GPS clock as an output, however, it would have been obvious to one having ordinary skill in the art to provide an output GPS clock output, since GPS Clock signals are typically provided to the GPS processor.

Regarding claim 7; as applied to claim 6, Shaeffer does not disclose generating a GPS Clock signal with a frequency of approximately 49 MHz, however, it would have been obvious to one having ordinary skill in the art at the time of the invention to set the GPS Clock signal to approximately 49 MHz, since GPS Clock signals are typically set to approximately 49 MHz.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 571-272-3045. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Guillermo Munoz

GM
October 26, 2004

Jean B. Corriellus
JEAN B. CORRIELUS
PRIMARY EXAMINER

10-28-04